

## REMARKS

Upon entry of the present amendment, claims 18-42 will be pending. Claims 18, 26, and 36 have been amended for clarity (*see, e.g.*, paragraph [0039] of the published application, U.S. Pub. No. 2006/0076247) and to reinstate language pertaining to anions of the recited complex fluoro acids. Claims 27, 29, and 33-35 have been amended for clarity. New claims 37-42 have been added. All amendments and new claims are fully supported by the present application as filed. No new matter has been added.

Applicants filed a Notice of Appeal on February 25, 2010. Pursuant to 37 C.F.R. §1.114(d), the present submission is accompanied by a Request for Continued Examination (RCE) and the required fee set forth in § 1.17(e). Applicants therefore respectfully request withdrawal of the pending appeal and consideration of the present submission.

### *Claim Objection*

Applicants acknowledge and appreciate the withdrawal of the objection to claim 35.

### *Rejections Under 35 U.S.C. § 103(a)*

Claims 18-36 have been rejected for alleged obviousness over U.S. Pat. No. 5,908,511 to Bianchi (“the Bianchi patent”), in view of U.S. Pat. No. 6,361,613 to Lee (“the Lee patent”), as “evidenced by” U.S. Pat. No. 6,833,328 to Kool (“the Kool patent”), and in further view of U.S. Pat. No. 6,565,735 to Fortunati, et al. (“the Fortunati patent”).

According to the Office, it would have been obvious to include a complex fluoride such as the fluorosilicate salt disclosed by the Lee patent into the pickling solution of the Bianchi patent “to substitute hydrofluoric acid” (8/25/09 Office Action at page 3, third paragraph). Applicants respectfully traverse, at least because the posited combination of references is not one that a person of ordinary skill in the art at the time the present application was filed would have reason or motivation to make, and as such a *prima facie* case of obviousness has not been presented.

The Bianchi patent is directed to a process for pickling and passivation “without using nitric acid” (*see* Bianchi patent at title), that “is based on the use of a pickling bath containing

iron ions,  $\text{H}_2\text{SO}_4$ , HF,  $\text{H}_2\text{O}_2$  and conventional additives” (see *id.* at col. 3, lines 16-18). The Lee patent discloses “a pickling solution containing nitrates and fluorides as essential components” (see Lee patent at, for example, Abstract; col. 3, lines 56-57; col. 4, lines 8-9; col. 5, lines 12-13; col. 5, lines 18-19; col. 6, lines 38-39), given that, according to the reference, such mixture of nitrates and fluorides is “superior to the mixture of nitric acid and hydrofluoric acid” in a number of purported respects (Lee patent at Abstract). Among various nitrates and fluorides, the Lee patent provides that exemplary fluorides include fluorosilicate salts. The Office alleges that, in view of the disclosure by Lee that the mixture of nitrates and fluorides can provide a “superior” substitute for the mixture of nitric acid and hydrofluoric acid, it would have been obvious to replace hydrofluoric acid in the pickling processes of the Bianchi patent with a fluoride (including a fluorosilicate salt) (see 8/25/09 Office Action at page 3).

However, the proposed modification of the Bianchi patent would be contrary to the principle of operation of that reference and cannot form the basis for a proper *prima facie* case of obviousness. For example, the Bianchi patent *requires* the inclusion of hydrofluoric acid in the disclosed pickling bath, specifying that “[i]n the absence of hydrofluoric acid, the operating potential rises to the material steady passivity field and descaling practically does not take place” (Bianchi patent at col. 3, lines 36-39). The Bianchi patent emphasizes the fundamental importance of descaling in its disclosed processes, indicating that “*the primary objective of pickling is descaling* and dechromized alloy removal” (*Id.* at col. 8, lines 63-65; emphasis added). Accordingly, the principle of operation of the Bianchi patent is the inclusion of hydrofluoric acid in order to ensure the occurrence of descaling, as the primary objective of the disclosed pickling processes. The proposal by the Office to remove hydrofluoric acid from the pickling baths of the Bianchi patent (for substitution with the fluorides that are disclosed in the Lee patent) would therefore impermissibly change the principle of operation of the Bianchi patent, and thus the posited modification of that reference cannot form the basis for a proper *prima facie* case of obviousness. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious)

In addition, in stating that the absence of hydrofluoric acid prevents descaling from occurring, the Bianchi patent effectively *teaches away* from the removal of hydrofluoric acid from the disclosed pickling baths. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983) (a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention)

For at least these reasons, the rejection of claims 18-36 under § 103(a) should be withdrawn.

Furthermore, the Office's proposed modification of the Bianchi patent by the Lee patent results from a misinterpretation of the Lee patent, and in fact, a proper interpretation of the cited references demonstrates that the proposed combination of references is improper.

As stated above, the Lee patent discloses "a pickling solution containing nitrates and fluorides as essential components", given that, according to the reference, such mixture of nitrates and fluorides is "superior to the mixture of nitric acid and hydrofluoric acid" in a number of respects (Lee patent at Abstract). Thus, the relevant teaching of the Lee patent is that pickling processes that involve the use of *mixtures of* nitric acid and hydrofluoric acid can be modified by providing *mixtures of* nitrates and fluorides. The Lee patent does *not* teach that pickling processes that involve the use of hydrofluoric acid *in the absence of nitric acid* can be modified by providing fluorides only, i.e., without also including nitrates. The Lee patent repeatedly emphasizes this fact by describing both fluorides and nitrates as "essential components" in the disclosed pickling baths (see Lee patent at, for example, Abstract; col. 3, lines 56-57; col. 4, lines 8-9; col. 5, lines 12-13; col. 5, lines 18-19; col. 6, lines 38-39). The Lee patent *never* teaches or suggests the use of either fluorides or nitrates in isolation from one another as separate substitutions for hydrofluoric acid or nitric acid, respectively. Thus, it is only through the impermissible use of hindsight provided by the Applicant's own disclosure that the Office has erroneously concluded that the Lee patent discloses the use of fluorides in place of hydrofluoric acid in pickling baths that do not contain nitric acid, and without simultaneously substituting such nitric acid with nitrates.

Accordingly, the Lee patent does not teach or suggest that which is alleged by the Office. For at least this reason as well, the rejection of claims 18-36 for alleged obviousness should be withdrawn.

Furthermore, to the extent that the Office takes the position that the fluorosilicate salts that are disclosed as acceptable fluorides in the Lee patent are precursors for fluorosilicic acids that would form fluorosilicic acid after being incorporated into an aqueous pickling solution (*see* 8/25/09 Office Action at page 6, next to last paragraph, citing the Kool patent), it is noted that the Kool patent also provides that nitrate salts are precursors of nitric acid (*see* col. 4, lines 10-27). Thus, the Office's position with regard to fluorosilicate salts would mean that the inclusion of both of the materials that are said to be "essential components" by the Lee patent, *i.e.*, fluorides and nitrates (which are disclosed as nitrate salts – *see* Lee patent at col. 6, line 66, *et seq.*), into the pickling baths of the Bianchi patent appears to advocate the inclusion of a component (nitrate salts) that would form nitric acid in the aqueous conditions of the pickling baths of the Bianchi patent. However, because the Bianchi patent explicitly excludes the presence of nitric acid in the disclosed pickling baths,<sup>1</sup> the Office's position would be contrary to the intended purpose of the Bianchi patent (*i.e.*, to provide a pickling bath "without nitric acid"). Thus, the Office's position regarding fluorosilicate salts would seem to undermine the Office's position regarding the propriety of the modification of the Bianchi patent using the teachings of the Lee patent. For at least this reason as well, the rejection of claims 18-36 is improper and should be withdrawn.

In addition, the posited combination of references does not disclose or suggest the formation of a pickling solution that contains "an amount of fluoride ions and/or hydrofluoric acid" as recited in claims 18, 26, and 36, or the formation of a pickling solution that contains "an amount of fluoride ions *and* hydrofluoric acid" (emphasis added) as recited in claims 37-39.<sup>2</sup> The Office's general theory of alleged obviousness involves the removal of hydrofluoric acid from the pickling baths of the Bianchi patent and the inclusion of fluorosilicate salts as disclosed in the Lee patent. The purported motivation for doing so is, according to the Office, the disclosure by the Lee patent that the mixture of nitrates and fluorides is "superior

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<sup>1</sup> No less than the title of the Bianchi patent specifies that the disclosed pickling baths are prepared "WITHOUT USING NITRIC ACID."

<sup>2</sup> Applicants note that although the present claims specify that "less than 10 g/l of free fluoride ions and/or free hydrofluoric ions" are present, the language of the claims is such that "an amount of fluoride ion" and/or "hydrofluoric acid" (as the case may be) are present in an amount such as to allow "at least 1% and up to 100% of the iron(III) ion [to be] present in the form of fluoride complexes", *i.e.*, more than zero g/l of "an amount of fluoride ion" and/or "hydrofluoric acid" must be present.

to the mixture of nitric acid and hydrofluoric acid” in a number of respects (Lee patent at Abstract). Thus, pursuant to the Office’s proposed modification of the Bianchi patent by the Lee patent, any hydrofluoric acid as disclosed in the Bianchi patent will have been removed and replaced by fluorosilicate salts, *i.e.*, the resulting combination will not contain any hydrofluoric acid. Furthermore, there is no teaching or suggestion in the Bianchi patent<sup>3</sup> or the Lee patent<sup>4</sup> to add fluoride ions as a further ingredient in a pickling solution. The Fortunati patent does not remedy this shortcoming of the Bianchi patent and the Lee patent. The Fortunati patent provides that chloride ions may be used to increase pickling kinetics “in the case of ferritic stainless steels”, whereas fluoride ions may be used to increase pickling kinetics “in the case of austenitic or super stainless steels or superalloys” (*see* Fortunati patent at col. 6, lines 9-15). The Fortunati patent does not disclose that *both* chloride ions *and* fluoride ions would ever be used in the same pickling composition. The Office cites the Fortunati patent for its teaching as to the inclusion of chloride ion, and therefore cannot cite the Fortunati patent for the inclusion of fluoride ion as well. Thus, the cited references, either alone or in combination, cannot be said to disclose a pickling bath in which: (1) hydrofluoric acid is present (as in claims 18, 26, 36, and 40-42); (2) fluoride ions are present (as in claims 18, 26, and 36, in the alternative to hydrofluoric acid); or (3) both hydrofluoric acid and fluoride ions are present (as in claims 37-39). For at least this reason as well, the rejection of the pending claims for alleged obviousness over the Bianchi patent in view of the Lee patent and the Fortunati patent should be withdrawn.

### ***Conclusion***

Applicants submit that the foregoing represents a bona fide attempt to advance the present case to allowance, and that the application is now in condition therefor. Accordingly, Applicants respectfully request an indication of allowability and an early Notice of

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<sup>3</sup> The Bianchi patent recognizes that some fluoride ion will result from the inclusion of hydrofluoric acid (*see, e.g.*, col. 3, lines 42-46). However, if the hydrofluoric acid in the pickling baths of the Bianchi patent is replaced by fluorosilicate salts in accordance with the Office’s proposed modification of the Bianchi patent in view of the Lee patent, then the source of this fluoride ion will have been removed.

<sup>4</sup> The Lee patent lists examples of nitrates and examples fluorides that may be used to replace nitric acid and hydrofluoric acid, respectively, and does not disclose that mixtures of multiple nitrates and/or multiple fluorides may be used (*see* Lee patent at col. 6, line 66 to col. 7, line 9).

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PATENT

Allowance. If the Examiner believes that a telephone conference would expedite prosecution of this application, please telephone the undersigned at 215-568-3100.

The Commissioner is hereby authorized to charge any fee deficiency, charge any additional fees, or credit any overpayment of fees, associated with this application in connection with this filing, or any future filing, submitted to the U.S. Patent and Trademark Office during the pendency of this application, to Deposit Account No. 23-3050.

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